

**ABSTRACT OF THE DISCLOSURE**

An electrode position detection system for a welder having a laser that is projected in a lateral plane to laterally cross a welding wire at a location below a contact tip of a welding gun and a receiver that receive the laser beam after crossing the welding wire, and a measuring device that determines one or more parameter of the welding wire based on the received laser beam. Arc  
5 voltage measurements can also be used to determine one or more parameter of the welding wire.